**K-5 Math Lesson Plan**

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| **Teacher: Flick** | | | **Grade: 3** | | | **Date(s)**: LP4 August 30, 2012 |
| **Unit Title: Unit 1 -** Place Value with Addition and Subtraction within 1,000 | | | | **Corresponding Unit Task:** Taught prior to Performance Task 1; ***This lesson will mainly focus on using what students already know about place value to compare and order whole numbers.*** | | |
| **Essential Question(s):**   * How does place value understanding help me add and subtract numbers? * Why do I need to know multiple strategies to add and subtract numbers? * What strategies can I use to add and subtract multi-digit numbers? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**   * POTD * Elmo/projector * 2 groups of objects * Poster of each symbol: ≥, ≤, = * Comparing problems posters or sheet for the Elmo * enVisions Topic 1 TE * Sticky notes * “Parking Lot” * PSJ labels | | **Student:**   * Number tiles or number cards 0-9 * Grid/graph paper per student * Number lines or hundreds boards * Base Ten blocks * Mini white boards (with grid lines)/marker * Fly swatters * “Comparing Numbers” worksheet per student * PSJ * Math binder * Planner | | | **Supporting vocabulary:** digit, value, least, greater  **Essential vocabulary:** place value, ones, tens, hundreds | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  √ 1. Make sense of problems and persevere in solving them.  √ 2. Reason abstractly and quantitatively.  √ 3. Construct viable arguments and critique the reasoning of others.  √ 4. Model with mathematics.  √ 5. Use appropriate tools strategically.  √ 6. Attend to precision.  √ 7. Look for and make use of structure.  √ 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards: 3.NBT.1 *(correlates to NCSCOS objective 1.01)*** Use place value understanding to round whole numbers to the nearest 10 or 100. | | | | | |
| **I Can Statement(s):**   * I can compare whole numbers by using what I know about place value. | | | | | |
| **Activating Strategy/Hook:**  Choose a Problem of the Day (POTD) – either the one below (3-digits), or enVisions 1-2 POTD (4-digits). Display the POTD on the Elmo (or chart paper). Students will answer the POTD in their math binders. Come together as a class and discuss:  ***POTD:***  3  5  8  Bradley has three number cards:  What is the ***greatest*** three-digit number he can make?  What is the ***least*** three-digit number he can make?  Say: *Suppose I have a group of 4 pens and a group of 6 pens.* Show students the two groups. Make sure that they are the same exact pen, that the only thing different about the two groups is the quantity. *How can I* ***compare*** *the pens?* Allow student discussion and brainstorms. Students will likely say things that are similar, like color, to which you respond *that is a similarity*. Guide students to realize the only way to compare the groups is by their number. How many are there? Show the groups being counted out on the Elmo. Visually show how 4 is less than, or smaller than, 6. | | | | | |
| **Teacher Directed:**  Say: *You already know how to write a number in a place-value chart in standard form, expanded form, word form, and picture form. Today you are going to learn how to compare numbers using place value.* Discuss the word ***compare***. Provide real-world examples, like compare two lunchboxes, two hairstyles, two markers, etc. Say: *When you compare things you describe their differences. When you compare numbers you look at the difference in their values. That will tell you which one is bigger/greater or smaller/less.*  Provide students with grid/graph paper so they can work with you. Think aloud: *Suppose I have a group of 345 pens and a group of 354 pens. How can I use my place value chart to help me find out which group is more?* On the board, draw a place value chart to the hundreds. Plug in each number in standard form (see example below). Cover the tens and ones column. Model for students to look at the place with the greatest value, which in this scenario is the hundreds. Compare the digits in that place. Think aloud: *Both numbers have the digit three in the hundreds place. That means that they each have three hundreds. That’s the same, not different. I have to move on to the next place.* Now, cover up just the ones column. Think aloud to compare the digits in the tens column the same way you compared the digits in the hundreds column. *The number 345 has the digit 4 in the tens place, so it has 40. The number 354 has the digit 5 in the tens place, so that has 50. 50 is larger than 40*. Circle the number 354. Say: *354 is larger, or greater than, 345. I would write that statement like this: 354 ≥ 345.*   |  |  |  | | --- | --- | --- | | HUNDREDS | TENS | ONES | | 3 | 4 | 5 | | 3 | 5 | 4 | |  |  |  |       Create an anchor chart showing the symbols used for comparing numbers an what they mean: **≥ *greater than*** “because the alligator always wants to eat the bigger piece of food”  **≤ *less than*** “because the alligator always wants to eat the bigger piece of food”  (Helpful Hint: Your left pointer finger and thumb make an L shape. If students tilt it sideways it looks similar to a less than sign. Less = L.)  **= *equal to*** “because the alligator can’t figure out which he wants more because they are  the same, so he swims away”  Model at least one more example of comparing numbers with hundreds. Then model comparing: 1,000 and 785; 557 and 555. Lastly, do several examples on the grid/graph paper with the students. Use enVisions Topic 1 TE page 13 and 14 for examples, if needed. | | | | | |
| **Guided Practice:**  Play “Comparing Numbers Relay Race” by dividing the class up into three or four equal lines. On the board post the greater than, less than, and equal to signs. Provide the first person in each line a fly swatter and the second person in each line a mini-white board and a marker.  Display a comparing problem either on the Elmo or on a piece of construction paper on the board. The student with the white board has to solve the comparing problem and show the person with the swatter. The swatter needs to swat the correct symbol, but he/she cannot do so until the teammate with the white board gives him/her the answer. Once an answer is swatted, the fly swatter gets “stuck” and cannot be lifted up; the answer cannot be changed. The first team to swat the correct symbol gets a point. (You may want to set a kitchen timer for 10 seconds or so.) The swatter goes to the back of the line, and the white board person passes it back and takes the fly swatter. Continue with problem #2, rotating after each problem. | | | | | |
| **Independent Practice:**  Students will return to their seats and independently complete “Comparing Numbers” worksheet. They may use grid/graph paper and/or manipulatives if desired. | | | | | |
| **Closing/Summarizing Strategy:**  Review the lesson: Discuss the “I can” statement listed above. Have students discuss their feelings (Think-Pair-Share): *Can you? Why or why not? What do I need more practice on?* Students will write any questions or areas needing more assistance in the “parking lot”.  Assign homework: Problem Solving Journal (PSJ) problem:  *The table below shows the Water Boundaries in the state of Texas.*   |  |  | | --- | --- | | ***TEXAS WATER BOUNDARIES*** | ***LENGTH*** | | *Red River* | *726 miles* | | *Rio Grande* | *1,254 miles* | | *Sabine River, Lake, and Pass* | *292 miles* | | *Tidewater coastline* | *624 miles* |  * *What river is the longest? How do you know? Explain.* * *What river is the shortest? How do you know? Explain.* * *Write a mathematical sentence comparing two rivers.* | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| Students will complete “Comparing Four-digit Numbers” worksheet for Independent Practice. | | | Provide number lines or hundreds boards for students to use when comparing numbers. | | | Provide number lines or hundreds boards for students to use when comparing numbers. |
| **Assessment(s):**   * PSJ work from last night’s homework. * Visual assessments on-going throughout the lesson. * Work from independent practice. * Student self -assessment of the lesson and feedback in the parking lot. | | | | | | |
| **Teacher Reflection:** (Next steps?) | | | | | | |